

PSYCHE.

A LIST OF THE ORTHOPTERA OF ILLINOIS.—IV.

BY JEROME MCNEILL, FAYETTEVILLE, ARK.

ACRIDIDAE (ACRIDINI, TETTIGINAE).

74. *Schistocerca americana* Drury. Of rare occurrence north of the center of the state but common southward. I have taken a few specimens in Rock Island County, the earliest recorded appearance being Sept. 20th.

75. *Acridium alutaceum* Harr. The only species of this genus found in Rock Island County. It is found sparingly along rail-roads and in waste ground, but there is a very small district where it is extremely abundant. This is a little strip of ground a few hundred feet in length along the C. B. & Q. R. R. about one mile and a half southwest of Colona, Henry Co. Prof. Garman with a party from Illinois University first stumbled upon this locality a few years ago, and I visited it in 1889. This colony has established itself in a patch of Johnson grass, a species of Andropogon, which seems to have furnished it with the conditions exactly fitted for its development. These specimens have the dorsal stripe almost always distinct. Colona, Aug. 12th.

*76. *Acridium emarginatum* Scudd. Reported by Mr. Thomas as having been taken a few times in the state.

*77. *Acridium rubiginosum* Scudd. Said by Mr. Thomas to be a rather

rare species found only in the neighborhood of oak groves.

*78. *Melanoplus spretus* Thomas. Stray specimens have been identified by Mr. Thomas, but it cannot be considered a resident species, as Illinois is outside of even the "Temporary region" as determined by the U. S. entomological commission.

79. *Melanoplus atlantis* Riley. This wide spread species occurs throughout the state. It seems however to be very unequally distributed. In some localities it is about as common as *M. femurrubrum* while in others it may be very rare. In Rock Island County it is usually rare or at least uncommon but on a sand hill an eighth of a mile south of Moline bridge on Rock River it is very abundant. As this sand hill shelters a number of species which occur not at all or rarely elsewhere in the neighborhood it may be well to say a few words as to its character. It consists entirely of fine clean sand which is in places covered with a thin soil which supports a scanty vegetation of willows and sand-burr but which is for the most part wholly barren. This hill rises gradually on every side from the Rock River bottom. It is about a half mile in length and only a few hundred yards in width at the widest. At the highest

point it is not much lower than the hills on either side of the river valley. Its size and isolated position make it a conspicuous object from the river bluffs for several miles above and below the bridge. It is in fact a small island or "tow head" in the old Mississippi channel. This river as is well known once flowed through the Meridosa swamps, which are situated about four miles above Cordova, into the Rock River valley, which it occupied to the present mouth of this river. A considerable part of this hill is fenced out from stock and here the natural features have been preserved for a long time so that many species retain a foothold or even flourish here which do not seem to occur elsewhere in the county. *Atlanis* seems to be at least imperfectly two brooded in the northern part of the state as I have taken a few specimens as early as the middle of June while the great majority attain the adult stage after the middle of August. It was formerly thought to be not easy to separate this species from *M. femur-rubrum*, the common Red-legged Locust of our meadows, and indeed this difficulty still exists in the case of the females, but it is now known that the males at least can be very readily distinguished from those of the allied species. This distinction consists mainly in the scoop-shaped ultimate abdominal segment, which is obscurely notched at the tip in *atlanis* and in the rounded ultimate segment of *femur-rubrum* which is squarely truncate at the apex.

So. *Melanoplus femur rubrum* De

Geer. This well known species is abundant everywhere in meadows and along wood sides. It has been taken at Moline as early as the twenty-third of June.

81. *Melanoplus collinus* Scudder. This rather common species is pretty closely restricted to the tops of hills and the sides of ravines which are almost too barren for pasturage. It is never, so far as I am aware found in rich bottom lands.

82. *Melanoplus punctulatus* Uhler. The museum of the State laboratory of natural history of Illinois contains two specimens a male and a female from Galesburg and Urbana. These are the only specimens from the state that I have seen.

83. *Melanoplus minor* Scudd. This species is included in the list because its occurrence in Indiana renders its occurrence here almost certain. It has been captured at Bloomington, Indiana.

84. *Melanoplus differentialis* Thos. This species is common along roadsides. Its earliest appearance at Moline is August 8th.

85. *Melanoplus bivittatus* Say. This is an uncommon species in the northern part of the state at least. In eastern Indiana it is not unfrequently so numerous as to do considerable injury to hay and grain crops. It matures at least a month earlier than the last mentioned species, according to my observation, as I have taken it at Dublin, Ind. as early as June 28th and at Moline as early as the 7th of July.

86. *Melanoplus cenchri* n. sp.

Male: Length to tip of abdomen .80 to .90 in.; length of elytra .70 to .74 in.

General color dull brown varying through testaceous to bright yellow, but in the lightest specimens the sternum is dull olive or brown. In the most common form the head, disk and sides of the pronotum are light brown or testaceous or at least lighter in color than the middle region of the body. The black band of the pronotum, common in species of this genus, is entirely obsolete or rarely represented by a faint dusky line or narrow band extending along the sides of the head and the lateral carinae of the pronotum to the base of the elytra. The elytra are testaceous, unspotted or sometimes very obscurely spotted with faint small or medium dusky flecks. The posterior femora have the upper half of both the inner and the outer faces infuscated or at least darker than the lower part with upper margin marked with three lighter spots. The posterior tibiae are bright blue with white spines tipped with black. The whole body is hairy, but this feature is more marked upon the disk of the pronotum, the upper face of the posterior tibiae and at the end of the abdomen. The facial costa is sulcate, and the median carina of the pronotum is distinct upon the metazone, more or less distinct upon the prozone and cut by three incisions. The elytra are narrow and usually extend much beyond the abdomen. The posterior femora extend more or less beyond the tip of the abdomen. The anal cerci are broad at the base but are suddenly contracted on the upper side to half or less than half the width at their origin; the lower margin is straight and oblique, so that the apical two-thirds of the cerci is directed upwards but of equal width to the apex which is rounded. The last ventral segment is elevated and narrowed above at the sides with the upper outline, seen from behind forming a distinct but very obtuse angle.

Female: Length to tip of ovipositor .90 to 1.08 in.; length of elytra .75 to .85 in.

Similar to the male in color but somewhat

stouter and larger. The elytra extend to or considerably beyond the tip of the abdomen. The posterior femora do not generally reach to the tip of the abdomen. The upper plates of the ovipositor are much exerted, strongly upcurved and very acute while the lower plates are long and slender with a small or minute lateral tooth at the base.

Moline, Ill. August 27. 3 ♂'s, 12 ♀'s.

The species just described belongs to the *femur-rubrum* group of the genus but it is very distinct from this species and all others apparently. It was found in large numbers on the sand hill before referred to and afterwards a few specimens were found at widely scattered points in Rock Island and adjoining counties. It seems to inhabit only high sandy ground. The specimens found upon the sand hill were confined to that portion where the only vegetation was sand-burr (*Cenchrus*). They were colored so nearly like the yellow sand that they were difficult to see when only two or three feet away. The specimens I afterwards found were generally darker in color but they were invariably in the neighborhood of sand-burrs. In the lighter specimens the apical half or two-thirds of the elytra were almost perfectly transparent.

87. *Pezotettix viridulus*. This very pretty species was described from specimens obtained in this locality. It is by no means common however, being restricted to a few localities. It shows a decided preference for the sides of open grassy ravines. It is I think the first orthopteron to become mature from eggs hatched in the spring. I have found

full grown specimens as early as the 5th of June. The museum of the State laboratory of natural history contains a few specimens from Normal and Bloomington, Ill. My collection contains specimens from Bloomington, Indiana.

88. *Pezotettix occidentalis* Bruner. A very common species which makes its appearance as early as the middle of July and is abundant through August and September.

89. *Pezotettix scudderi* Uhler. This is probably as common as the last mentioned species and probably more evenly distributed throughout the territory which it occupies. *Occidentalis* certainly prefers grassy hillsides and tops, but *scudderi* is very frequently found along roadsides or in pastures. It reaches maturity about the first of August. It is tolerably certain that *unicolor* Thos. is but a synonym of this species. Mr. Uhler's specimens were from Baltimore and Rock Island, and it is not probable that I overlooked the species during four years collecting in the neighborhood of the last mentioned place. Mr. Thomas distinctly states that he was unacquainted with *scudderi*. So it is scarcely to be doubted that he redescribed this species as *unicolor*.

90. *Pezotettix gracilis* Bruner. This is *P. minutipennis* Thos. It is very rare in the north-western part of the state, but seems to be widely distributed, as specimens have been found at Moline, Bloomington, Urbana and Normal. It is a wood loving species. It has been taken as early as the first of July.

91. *Pezotettix autumnalis* Dodge.

The occurrence of this species was something of a surprise as it was thought to be a local Nebraska form. Its peculiar distribution here however leads me to think that it may be a widely spread species and explain perhaps why it has been supposed to be so restricted in its range. It occurs in abundance at one place near Colona, Henry Co., Ill., according to Professor Garman, who gave me specimens obtained at that point and saw nothing of it anywhere else, but several days search for the species was entirely fruitless, and I was almost inclined to think some mistake had been made in referring the specimens to that part of Illinois, when I stumbled upon the species at Cordova, Rock Island Co. There I found it abundant in a large orchard on the east side of a high hill. Careful search in that neighborhood did not enable me to find it any where else, and I have never found it in any other part of the state. The Colona specimens were captured Aug. 20th, 1885. Those captured at Cordova were taken the 28th of September, 1889.

92. *Pezotettix viola* Thos. This is a south-western form not generally distributed throughout the state. Said by Thomas to inhabit central and southern Illinois, but the museum of the State laboratory of natural history contains but two specimens captured at Running Lake July 15, and in September. Mr. C. W. Woodworth of Fayetteville, Ark., has repeatedly observed females of this species ovipositing in crannies of wood and stone frequently three or four feet from the ground.

93. *Pezotettix manca* Smith. This species is put in the list of Illinois Orthoptera on the strength of a single pair of specimens taken at Running Lake July 15, 1883.

94. *Tettix cristatus* Harr. According to Bolivar¹ *Batrachidea carinata* Scudd. is a synonym of *B. cristata* Harr. and the latter is transferred to the genus *Tettix*. I have a single specimen from Bloomington.

95. *Tettix triangularis* Scudd. I have seen but two specimens from this state; both are in my collection, one from Rock Island and the other from Bloomington.

96. *Tettix granulatus* Kirby. I have a specimen from Brookeville, Ind., and one from Moline, which I refer to this species.

97. *Tettix ornatus* Say. There is a single specimen in the museum of the State laboratory of natural history from Bloomington, Ill. which belongs to this species. I have a specimen from Bloomington, Indiana, which I place here. While these four species are all found in the state it is pretty evident that they are all rare, since out of all the hundreds of Tettiginae examined by me these seven individuals are all that I have seen of these species from Illinois or Indiana.

98. *Tettix arenosus* Burm. I refer to this species a large number of *Tettix* collected at various times by Mr. C. A. Hart of Illinois University and a limited number of specimens that I have collected in the north-western part of the state. I have formerly been accustomed to

consider this form as *T. rugosus* Scudd. but these specimens seem to be indistinguishable from *T. arenosus* Burm. as Mr. Scudder understands this species, and they do not seem to belong to the new genus *Paratettix* in which Bolivar places *T. rugosus* Scudd. Besides this species is too nearly allied to *T. cuculatus* Burm to allow of its being put in a different genus. I am tempted to risk the opinion that *T. arenosus* and *T. rugosus* are too much alike to remain in different genera, if they are really different species. I have mature specimens that have been taken in every month from March to September inclusive, a fact which would seem to indicate that there are two or more broods of this species in a year, or that their breeding time is so irregular that they can not be divided into broods at all.

99. *Tettix cuculatus* Burm. This species is represented by numerous specimens taken in Rock Island and neighboring counties and by a few in Mr. Hart's collection. They were taken during the months of May, June, July, and August; I have three pupae taken at Hampton on May 5th and four taken at Moline, one on the 5th and three on the 8th. These pupae taken at about the same time in different localities are all ready to moult for the last time. This regularity would indicate that they have developed from eggs hatched in the spring, and if this is the case the title of *Pezotettix viridulus* Walsh to be the first grasshopper to be developed from eggs hatched in the spring will be in some danger.

¹ Essai sur les Acridiens de la Tribu des tettigidae, par Ign. Bolivar. Gand, 1887.

100. *Tettigidea lateralis* Say. This form is not uncommon at Moline but it is apparently much more common southward. I have a number of specimens collected from Aug. 9th to 16th; some of them are full grown but the majority are pupae in the last stage.

101. *Tettigidea polymorpha* Burm. I have not found this species in the neighborhood of Moline, but I have a number of specimens collected by Mr. Hart in the central part of the State.

PHASMIDAE.

102. *Diaperomera sayi* Gray. This species is not uncommon in Rock Island county and probably it is not less common throughout the State, though its form and habits render it too inconspicuous to be known by many. July 11th is the earliest date I have for its capture at Moline.

*103. *Diaperomera velii* Walsh, Proc. ent. soc. Philad., v. 3, 410.

104. *Anisomorpha buprestoides* Stoll. A single specimen in the mu-

seum of the State laboratory of natural history is labeled ♂ Saratoga, Union Co., Ill., July 1877.

MANTIDAE.

105. *Stagmomantis carolina* Linn. This species occurs not rarely in the southern part of the state.

BLATTIDAE.

*106. *Blatta germanica* Fab. Given on the authority of Thomas.

*107. *Periplaneta americana* Linn. Is in no collection of Illinois Orthoptera that I have seen, but I include it on the authority of Thomas.

108. *Periplaneta orientalis* Linn. Too abundant in old houses.

109. *Ischnoptera pennsylvanica* De Geer. Not found in Rock Island county, but it is common in the southern part of the state, where it is common under old logs.

*110. *Ischnoptera unicolor* Scudd. Given on the authority of Thomas.

A SUPPLEMENTARY NOTE ON DIABROTICA 12-PUNCTATA.

BY H. GARMAN, LEXINGTON, KY.

After the first part of my paper on this insect was published (*Psyche*, v. 6, p. 29) and the second part was nearly all in print, I received from Prof. C. V. Riley a copy of his notes on the habits and life-history of the species with per-

mission to use them in what I might subsequently write. It is not now possible for me to take advantage of this courtesy further than to add here some of the more important observations which his notes contain.